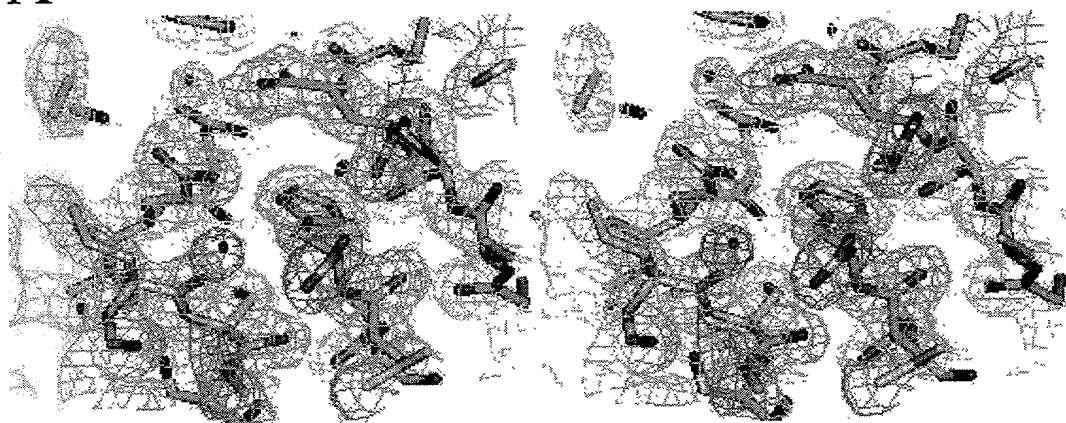


A



B

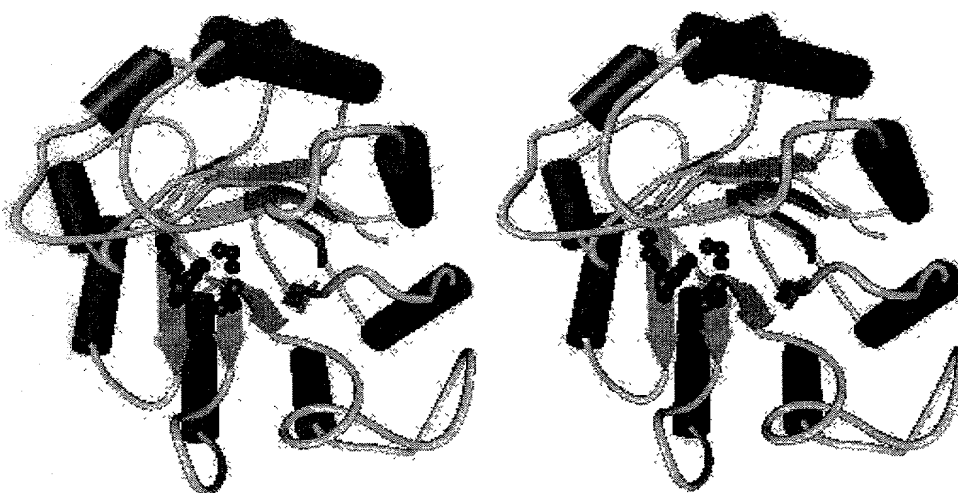


FIGURE 1 A&B

C

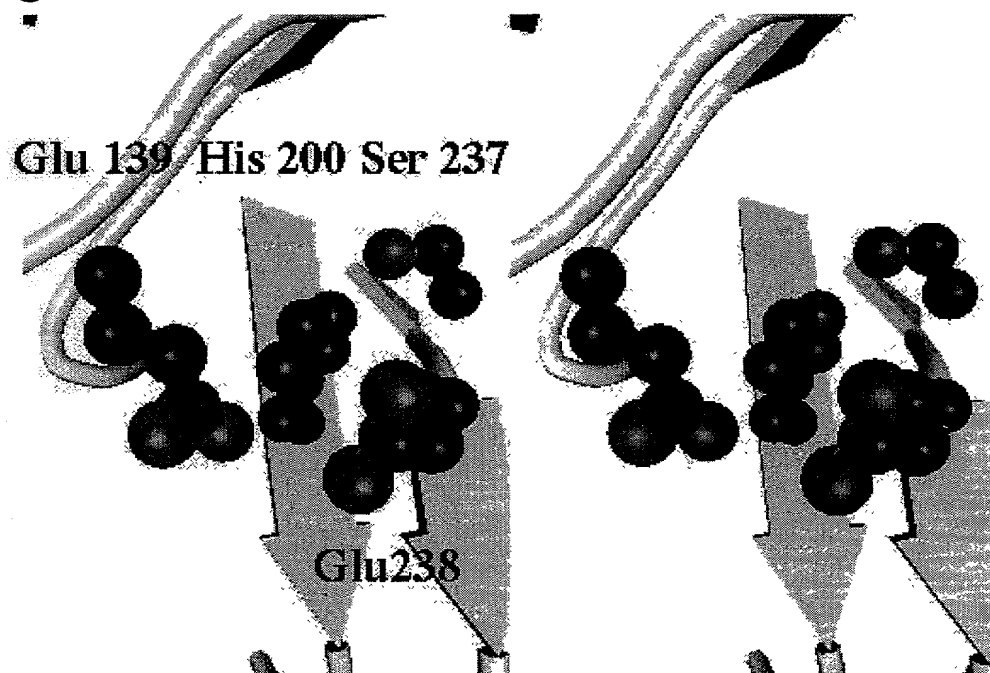
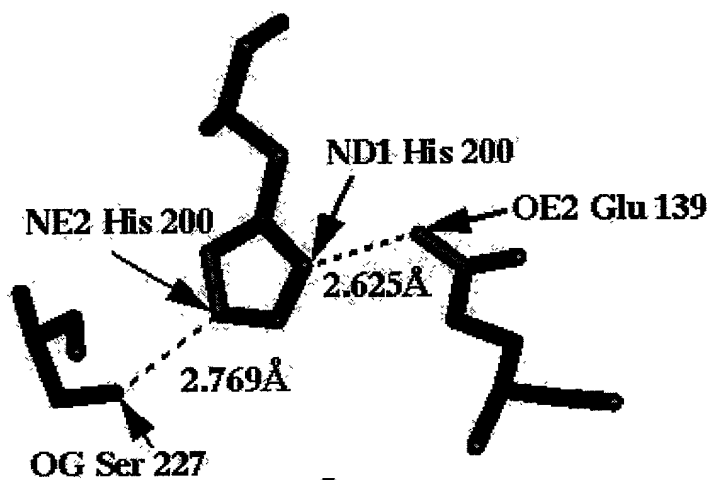
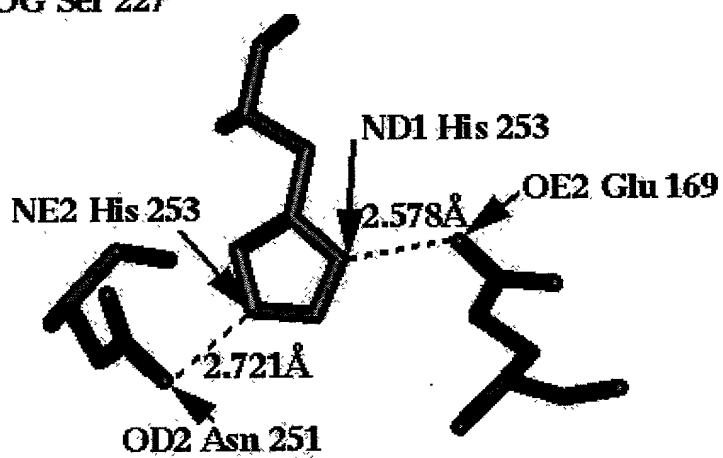


FIGURE 1 c

A



B



C

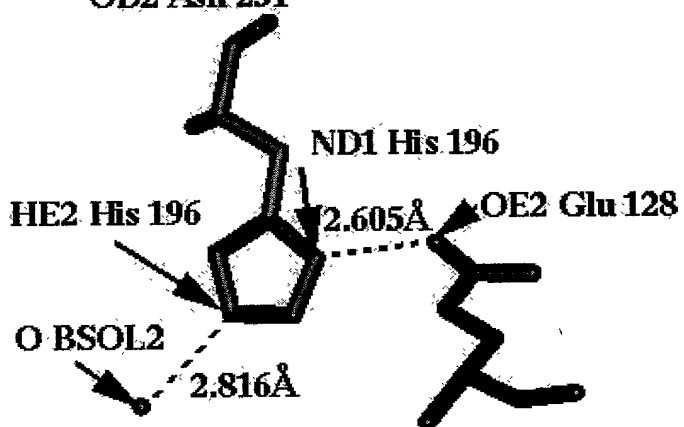


FIGURE 2 A,B  
& C

## FIGURE 3A

### (2) INFORMATION FOR SEQ ID NO: 1:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 1404 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: double
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
  - (A) ORGANISM: Bacillus sp.
  - (C) INDIVIDUAL ISOLATE: CBS 670.93
- (ix) FEATURE:
  - (A) NAME/KEY: sig\_peptide
  - (B) LOCATION: 1..78
- (ix) FEATURE:
  - (A) NAME/KEY: mat\_peptide
  - (B) LOCATION: 79..1404
  - (D) OTHER INFORMATION: /function= "endoglucanase"  
/EC\_number= 3.2.1.4  
/product= "BCE103 cellulase"
- (ix) FEATURE:
  - (A) NAME/KEY: CDS
  - (B) LOCATION: 1..1404

### (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

ATG AAA AAG ATA ACT ACT ATT TTT GCC GTA TTG CTC ATG ACA TTG GCG  
Met Lys Lys Ile Thr Thr Ile Phe Ala Val Leu Leu Met Thr Leu Ala  
-26 -25 -20 -15

FIGURE 3B

TTG TTC AGT ATA GGA AAC ACG ACA GCG GCT GAT GAT TAT TCA GTT GTA Leu Phe Ser Ile Gly Asn Thr Thr Ala Ala Asp Asp Tyr Ser Val Val -10 -5 1 5	96
GAG GAA CAT GGG CAA CTA AGT ATT AGT AAC GGT GAA TTA GTC AAT GAA Glu Glu His Gly Gln Leu Ser Ile Ser Asn Gly Glu Leu Val Asn Glu 10 15 20	144
CGA GGC GAA CAA GTT CAG TTA AAA GGG ATG AGT TCC CAT GGT TTG CAA Arg Gly Glu Gln Val Gln Leu Lys Gly Met Ser Ser His Gly Leu Gln 25 30 35	192
TGG TAC GGT CAA TTT GTA AAC TAT GAA AGC ATG AAA TGG CTA AGA GAT Trp Tyr Gly Gln Phe Val Asn Tyr Glu Ser Met Lys Trp Leu Arg Asp 40 45 50	240
GAT TGG GGA ATA ACT GTA TTC CGA GCA GCA ATG TAT ACC TCT TCA GGA Asp Trp Gly Ile Thr Val Phe Arg Ala Ala Met Tyr Thr Ser Ser Gly 55 60 65 70	288
GGA TAT ATT GAC GAT CCA TCA GTA AAG GAA AAA GTA AAA GAG ACT GTT Gly Tyr Ile Asp Asp Pro Ser Val Lys Glu Lys Val Lys Glu Thr Val 75 80 85	336
GAG GCT GCG ATA GAC CTT GGC ATA TAT GTG ATC ATT GAT TGG CAT ATC Glu Ala Ala Ile Asp Leu Gly Ile Tyr Val Ile Ile Asp Trp His Ile 90 95 100	384
CTT TCA GAC AAT GAC CCG AAT ATA TAT AAA GAA GAA GCG AAG GAT TTC Leu Ser Asp Asn Asp Pro Asn Ile Tyr Lys Glu Glu Ala Lys Asp Phe 105 110 115	432
TTT GAT GAA ATG TCA GAG TTG TAT GGA GAC TAT CCG AAT GTG ATA TAC Phe Asp Glu Met Ser Glu Leu Tyr Gly Asp Tyr Pro Asn Val Ile Tyr 120 125 130	480
GAA ATT GCA AAT GAA CCG AAT GGT AGT GAT GTT ACG TGG GAC AAT CAA Glu Ile Ala Asn Glu Pro Asn Gly Ser Asp Val Thr Trp Asp Asn Gln 135 140 145 150	528
ATA AAA CCG TAT GCA GAA GAA GTG ATT CCG GTT ATT CGT GAC AAT GAC Ile Lys Pro Tyr Ala Glu Glu Val Ile Pro Val Ile Arg Asp Asn Asp 155 160 165	576
CCT AAT AAC ATT GTT ATT GTA GGT ACA GGT ACA TGG AGT CAG GAT GTC Pro Asn Asn Ile Val Ile Val Gly Thr Gly Thr Trp Ser Gln Asp Val 170 175 180	624
CAT CAT GCA GCC GAT AAT CAG CTT GCA GAT CCT AAC GTC ATG TAT GCA His His Ala Ala Asp Asn Gln Leu Ala Asp Pro Asn Val Met Tyr Ala 185 190 195	672
TTT CAT TTT TAT GCA GGA ACA CAT GGA CAA AAT TTA CGA GAC CAA GTA Phe His Phe Tyr Ala Gly Thr His Gly Gln Asn Leu Arg Asp Gln Val 200 205 210	720
GAT TAT GCA TTA GAT CAA GGA GCA GCG ATA TTT GTT AGT GAA TGG GGG Asp Tyr Ala Leu Asp Gln Gly Ala Ala Ile Phe Val Ser Glu Trp Gly 215 220 225 230	768
ACA AGT GCA GCT ACA GGT GAT GGT GGT GTG TTT TTA GAT GAA GCA CAA Thr Ser Ala Ala Thr Gly Asp Gly Gly Val Phe Leu Asp Glu Ala Gln 235 240 245	816

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FIGURE 3C

GTG TGG ATT GAC TTT ATG GAT GAA AGA AAT TTA AGC TGG GCC AAC TGG	864
Val Trp Ile Asp Phe Met Asp Glu Arg Asn Leu Ser Trp Ala Asn Trp	
250 255 260	
TCT CTA ACG CAT AAG GAT GAG TCA TCT GCA GCG TTA ATG CCA GGT GCA	912
Ser Leu Thr His Lys Asp Glu Ser Ser Ala Ala Leu Met Pro Gly Ala	
265 270 275	
AAT CCA ACT GGT GGT TGG ACA GAG GCT GAA CTA TCT CCA TCT GGT ACA	960
Asn Pro Thr Gly Gly Trp Thr Glu Ala Glu Leu Ser Pro Ser Gly Thr	
280 285 290	
TTT GTG AGG GAA AAA ATA AGA GAA TCA GCA TCT ATT CCG CCA AGC GAT	1008
Phe Val Arg Glu Lys Ile Arg Glu Ser Ala Ser Ile Pro Pro Ser Asp	
295 300 305 310	
CCA ACA CCG CCA TCT GAT CCA GGA GAA CCG GAT CCA GGA GAA CCG GAT	1056
Pro Thr Pro Pro Ser Asp Pro Gly Glu Pro Asp Pro Gly Glu Pro Asp	
315 320 325	
CCA ACG CCC CCA AGT GAT CCA GGA GAG TAT CCA GCA TGG GAT TCA AAT	1104
Pro Thr Pro Pro Ser Asp Pro Gly Glu Tyr Pro Ala Trp Asp Ser Asn	
330 335 340	
CAA ATT TAC ACA AAT GAA ATT GTG TAT CAT AAC GGT CAG TTA TGG CAA	1152
Gln Ile Tyr Thr Asn Glu Ile Val Tyr His Asn Gly Gln Leu Trp Gln	
345 350 355	
GCG AAA TGG TGG ACA CAA AAT CAA GAG CCA GGT GAC CCA TAC GGT CCG	1200
Ala Lys Trp Trp Thr Gln Asn Gln Glu Pro Gly Asp Pro Tyr Gly Pro	
360 365 370	
TGG GAA CCA CTC AAA TCT GAC CCA GAT TCA GGA GAA CCG GAT CCA ACG	1248
Trp Glu Pro Leu Lys Ser Asp Pro Asp Ser Gly Glu Pro Asp Pro Thr	
375 380 385 390	
CCC CCA AGT GAT CCA GGA GAG TAT CCA GCA TGG GAT TCA AAT CAA ATT	1296
Pro Pro Ser Asp Pro Gly Glu Tyr Pro Ala Trp Asp Ser Asn Gln Ile	
395 400 405	
TAC ACA AAT GAA ATT GTG TAC CAT AAC GGC CAG CTA TGG CAA GCA AAA	1344
Tyr Thr Asn Glu Ile Val Tyr His Asn Gly Gln Leu Trp Gln Ala Lys	
410 415 420	
TGG TGG ACA CAA AAT CAA GAG CCA GGT GAC CCA TAT GGT CCG TGG GAA	1392
Trp Trp Thr Gln Asn Gln Glu Pro Gly Asp Pro Tyr Gly Pro Trp Glu	
425 430 435	
CCA CTC AAT TAA	1404
Pro Leu Asn	
440	

(2) INFORMATION FOR SEQ ID NO: 2:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 467 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

NAME	RESIDENCE	DATE	REMARKS
Mr. J. H. Smith	123 Main St.	10/15/1910	Received \$10.00
Mr. W. B. Jones	456 Oak St.	10/15/1910	Received \$5.00
Mr. C. D. Brown	789 Elm St.	10/15/1910	Received \$2.50
Mr. E. F. Green	101 Pine St.	10/15/1910	Received \$1.00
Mr. G. H. White	234 Cedar St.	10/15/1910	Received \$0.50
Mr. I. J. Black	567 Birch St.	10/15/1910	Received \$0.25
Mr. K. L. Gray	890 Spruce St.	10/15/1910	Received \$0.10
Mr. M. N. Hall	1122 Ash St.	10/15/1910	Received \$0.05
Mr. O. P. King	1444 Willow St.	10/15/1910	Received \$0.02
Mr. Q. R. Lee	1776 Hickory St.	10/15/1910	Received \$0.01
Mr. S. T. Young	2098 Walnut St.	10/15/1910	Received \$0.00
Mr. U. V. Adams	2420 Chestnut St.	10/15/1910	Received \$0.00
Mr. W. X. Baker	2752 Mulberry St.	10/15/1910	Received \$0.00
Mr. Y. Z. Carter	3084 Peach St.	10/15/1910	Received \$0.00
Mr. A. B. Evans	3416 Plum St.	10/15/1910	Received \$0.00
Mr. C. D. Foster	3748 Cherry St.	10/15/1910	Received \$0.00
Mr. E. F. Gibson	4080 Apple St.	10/15/1910	Received \$0.00
Mr. G. H. Harris	4412 Pear St.	10/15/1910	Received \$0.00
Mr. I. J. Hill	4744 Orange St.	10/15/1910	Received \$0.00
Mr. K. L. King	5076 Lemon St.	10/15/1910	Received \$0.00
Mr. M. N. Lee	5408 Lime St.	10/15/1910	Received \$0.00
Mr. O. P. Miller	5740 Grape St.	10/15/1910	Received \$0.00
Mr. Q. R. Moore	6072 Fig St.	10/15/1910	Received \$0.00
Mr. S. T. Myers	6404 Coffee St.	10/15/1910	Received \$0.00
Mr. U. V. Nelson	6736 Tea St.	10/15/1910	Received \$0.00
Mr. W. X. Owen	7068 Tobacco St.	10/15/1910	Received \$0.00
Mr. Y. Z. Parker	7400 Cotton St.	10/15/1910	Received \$0.00
Mr. A. B. Quinn	7732 Sugar St.	10/15/1910	Received \$0.00
Mr. C. D. Reed	8064 Butter St.	10/15/1910	Received \$0.00
Mr. E. F. Russell	8396 Eggs St.	10/15/1910	Received \$0.00
Mr. G. H. Scott	8728 Oil St.	10/15/1910	Received \$0.00
Mr. I. J. Smith	9060 Vine St.	10/15/1910	Received \$0.00
Mr. K. L. Taylor	9392 Honey St.	10/15/1910	Received \$0.00
Mr. M. N. Thomas	9724 Molasses St.	10/15/1910	Received \$0.00
Mr. O. P. White	10056 Corn St.	10/15/1910	Received \$0.00
Mr. Q. R. Young	10388 Wheat St.	10/15/1910	Received \$0.00
Mr. S. T. Adams	10720 Barley St.	10/15/1910	Received \$0.00
Mr. U. V. Baker	11052 Rye St.	10/15/1910	Received \$0.00
Mr. W. X. Carter	11384 Oats St.	10/15/1910	Received \$0.00
Mr. Y. Z. Evans	11716 Clover St.	10/15/1910	Received \$0.00
Mr. A. B. Foster	12048 Alfalfa St.	10/15/1910	Received \$0.00
Mr. C. D. Gibson	12380 Hay St.	10/15/1910	Received \$0.00
Mr. E. F. Harris	12712 Straw St.	10/15/1910	Received \$0.00
Mr. G. H. Hill	13044 Saffron St.	10/15/1910	Received \$0.00
Mr. I. J. King	13376 Mustard St.	10/15/1910	Received \$0.00
Mr. K. L. Lee	13708 Sesame St.	10/15/1910	Received \$0.00
Mr. M. N. Miller	14040 Flax St.	10/15/1910	Received \$0.00
Mr. O. P. Moore	14372 Jute St.	10/15/1910	Received \$0.00
Mr. Q. R. Myers	14704 Cotton St.	10/15/1910	Received \$0.00
Mr. S. T. Nelson	15036 Hemp St.	10/15/1910	Received \$0.00
Mr. U. V. Owen	15368 Flax St.	10/15/1910	Received \$0.00
Mr. W. X. Parker	15700 Jute St.	10/15/1910	Received \$0.00
Mr. Y. Z. Quinn	16032 Cotton St.	10/15/1910	Received \$0.00
Mr. A. B. Reed	16364 Flax St.	10/15/1910	Received \$0.00
Mr. C. D. Russell	16696 Jute St.	10/15/1910	Received \$0.00
Mr. E. F. Scott	17028 Cotton St.	10/15/1910	Received \$0.00
Mr. G. H. Smith	17360 Flax St.	10/15/1910	Received \$0.00
Mr. I. J. Taylor	17692 Jute St.	10/15/1910	Received \$0.00
Mr. K. L. Thomas	18024 Cotton St.	10/15/1910	Received \$0.00
Mr. M. N. Adams	18356 Flax St.	10/15/1910	Received \$0.00
Mr. O. P. Baker	18688 Jute St.	10/15/1910	Received \$0.00
Mr. Q. R. Carter	19020 Cotton St.	10/15/1910	Received \$0.00
Mr. S. T. Evans	19352 Flax St.	10/15/1910	Received \$0.00
Mr. U. V. Foster	19684 Jute St.	10/15/1910	Received \$0.00
Mr. W. X. Gibson	20016 Cotton St.	10/15/1910	Received \$0.00
Mr. Y. Z. Harris	20348 Flax St.	10/15/1910	Received \$0.00
Mr. A. B. Hill	20680 Jute St.		

Met	Lys	Lys	Ile	Thr	Thr	Ile	Phe	Ala	Val	Leu	Leu	Met	Thr	Leu	Ala	
-26	-25					-20					-15					
Leu	Phe	Ser	Ile	Gly	Asn	Thr	Thr	Ala	Ala	Asp	Asp	Tyr	Ser	Val	Val	
-10					-5					1				5		
Glu	Glu	His	Gly	Gln	Leu	Ser	Ile	Ser	Asn	Gly	Glu	Leu	Val	Asn	Glu	
			10					15					20			
Arg	Gly	Glu	Gln	Val	Gln	Leu	Lys	Gly	Met	Ser	Ser	His	Gly	Leu	Gln	
		25					30					35				
Trp	Tyr	Gly	Gln	Phe	Val	Asn	Tyr	Glu	Ser	Met	Lys	Trp	Leu	Arg	Asp	
	40					45					50					
Asp	Trp	Gly	Ile	Thr	Val	Phe	Arg	Ala	Ala	Met	Tyr	Thr	Ser	Ser	Gly	
55					60					65					70	
Gly	Tyr	Ile	Asp	Asp	Pro	Ser	Val	Lys	Glu	Lys	Val	Lys	Glu	Thr	Val	
				75					80					85		
Glu	Ala	Ala	Ile	Asp	Leu	Gly	Ile	Tyr	Val	Ile	Ile	Asp	Trp	His	Ile	
			90					95					100			
Leu	Ser	Asp	Asn	Asp	Pro	Asn	Ile	Tyr	Lys	Glu	Glu	Ala	Lys	Asp	Phe	
		105					110					115				
Phe	Asp	Glu	Met	Ser	Glu	Leu	Tyr	Gly	Asp	Tyr	Pro	Asn	Val	Ile	Tyr	
	120					125					130					
Glu	Ile	Ala	Asn	Glu	Pro	Asn	Gly	Ser	Asp	Val	Thr	Trp	Asp	Asn	Gln	
135					140					145					150	
Ile	Lys	Pro	Tyr	Ala	Glu	Glu	Val	Ile	Pro	Val	Ile	Arg	Asp	Asn	Asp	
				155					160					165		
Pro	Asn	Asn	Ile	Val	Ile	Val	Gly	Thr	Gly	Thr	Trp	Ser	Gln	Asp	Val	
			170					175					180			
His	His	Ala	Ala	Asp	Asn	Gln	Leu	Ala	Asp	Pro	Asn	Val	Met	Tyr	Ala	
		185					190					195				
Phe	His	Phe	Tyr	Ala	Gly	Thr	His	Gly	Gln	Asn	Leu	Arg	Asp	Gln	Val	
	200					205					210					
Asp	Tyr	Ala	Leu	Asp	Gln	Gly	Ala	Ala	Ile	Phe	Val	Ser	Glu	Trp	Gly	
215					220					225					230	
Thr	Ser	Ala	Ala	Thr	Gly	Asp	Gly	Gly	Val	Phe	Leu	Asp	Glu	Ala	Gln	
				235					240					245		
Val	Trp	Ile	Asp	Phe	Met	Asp	Glu	Arg	Asn	Leu	Ser	Trp	Ala	Asn	Trp	
			250					255					260			
Ser	Leu	Thr	His	Lys	Asp	Glu	Ser	Ser	Ala	Ala	Leu	Met	Pro	Gly	Ala	
		265					270					275				
Asn	Pro	Thr	Gly	Gly	Trp	Thr	Glu	Ala	Glu	Leu	Ser	Pro	Ser	Gly	Thr	
	280					285					290					
Phe	Val	Arg	Glu	Lys	Ile	Arg	Glu	Ser	Ala	Ser						

FIGURE 3E

Pro	Thr	Pro	Pro	Ser	Asp	Pro	Gly	Glu	Pro	Asp	Pro	Gly	Glu	Pro	Asp			
				315					320					325				
Pro	Thr	Pro	Pro	Ser	Asp	Pro	Gly	Glu	Tyr	Pro	Ala	Trp	Asp	Ser	Asn			
				330				335					340					
Gln	Ile	Tyr	Thr	Asn	Glu	Ile	Val	Tyr	His	Asn	Gly	Gln	Leu	Trp	Gln			
		345					350					355						
Ala	Lys	Trp	Trp	Thr	Gln	Asn	Gln	Glu	Pro	Gly	Asp	Pro	Tyr	Gly	Pro			
	360					365					370							
Trp	Glu	Pro	Leu	Lys	Ser	Asp	Pro	Asp	Ser	Gly	Glu	Pro	Asp	Pro	Thr			
375					380					385					390			
Pro	Pro	Ser	Asp	Pro	Gly	Glu	Tyr	Pro	Ala	Trp	Asp	Ser	Asn	Gln	Ile			
				395					400					405				
Tyr	Thr	Asn	Glu	Ile	Val	Tyr	His	Asn	Gly	Gln	Leu	Trp	Gln	Ala	Lys			
		410						415					420					
Trp	Trp	Thr	Gln	Asn	Gln	Glu	Pro	Gly	Asp	Pro	Tyr	Gly	Pro	Trp	Glu			
		425					430					435						
Pro	Leu	Asn																
		440																

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